

A Plant Group

The Genus *Epilobium* (Onagraceae) in Australasia. A Systematic and Evolutionary Study. PETER H. RAVEN and TAMRA ENGELHORN RAVEN. Illustrations by Keith R. West. New Zealand Department of Scientific and Agricultural Research, Christchurch, 1976. 322 pp. NZ\$20. New Zealand Department of Scientific and Industrial Research Bulletin 216.

The appearance of a taxonomic monograph for a portion of one genus in one geographical area is not a novel event in botany. However, this monograph of Australasian—chiefly New Zealand—species of *Epilobium* is not only a coherent unit but an outstanding example of what a taxonomic monograph can be. The Australasian species of *Epilobium* form a monophyletic group. Thus the study of their radiation and speciation presents an unusually intricate opportunity. The challenge has been met admirably in the monograph by Raven and Raven, which is definitive in every conceivable way. Few monographs would give such extensive treatment, for example, to hybridization (pp. 34–67). This account includes the results of experimental hybridizations. When one realizes the tremendous knowledge and materials gathered by Raven and Raven within the confines of a sabbatical visit to New Zealand, this “model monograph” becomes even more astonishing.

Other unusual features include a multi-dimensional and artistically sophisticated account of ecological preferences of species and species groups. Sympatric occurrence is carefully documented. Scanning electron micrographs of seeds are used in a telling fashion. The colored drawings of species and colored distribution maps are an unusual luxury, but the quality of the stippled ink drawings alone would qualify this monograph for an award for botanical graphics. The discussion of potential means of dispersal will interest phytogeographers even if it is of necessity speculative, because it takes into account so many factors. Raven and Raven are not only courageous enough to ask that simple but frightening question, “Why are there so many species of *Epilobium*?,” they answer it—to this reviewer’s satisfaction, at least. Needless to say, the formal taxonomic paraphernalia are handled with completeness and expertise.

Each group to be monographed presents special problems that require special techniques. Perhaps the methodologies used by Raven and Raven for *Epilobium* do not comprise the entirety of



Epilobium billardierianum Sér. subsp. *hydrophilum* Raven & Engelhorn (Barrington Tops, N.S.W., Australia). This illustration shows a large-flowered form of the subspecies. “*Epilobium*,” comprising some 200 species, is by far the largest genus in the Onagraceae. Most of these species are found at relatively high latitudes or altitudes, and in the tropics the genus is confined to the mountains. Within these limits, the distribution of the genus is worldwide; but the distribution of species is not uniform. In Eurasia there are approximately 80 species, of which 22 are found in Europe. In North America there are about 45 species, displaying the greatest diversity in morphology and chromosome number found anywhere in the world. There are about 30 species in South America. Africa has 10, of which only four are not shared with Europe. This general pattern of species abundance is continued in Australia and New Guinea, where there are 13 species. It is sharply broken in New Zealand, where, even by the conservative taxonomic standards adopted in this bulletin, there are 37 native species of great ecological and morphological diversity.” [From *The Genus Epilobium* (Onagraceae) in Australasia]

approaches usable in today’s highly diversified “biosystematics,” but they are unerringly the right ones. From the incredible array of tools available to the biosystematist, any worker must choose those that are appropriate—or, as sometimes happens, those that are not beyond his or her abilities. Some readers might note the absence of comparative chemical data in the present monograph. This is entirely reasonable, because the primary problems presented by *Epilobium* in Australasia have to do with speciation in relation to habitat niche and patterns of hybridization. This monograph is, in fact, to be especially praised for not attempting to cover all possible water- fronts, but for making informed use of appropriately selected methods.

SHERWIN CARLQUIST
Rancho Santa Ana Botanic Garden,
Claremont, California

Books Received

Animal Health. Programs and Trends in the Americas, 1976. Proceedings of a meeting, Caracas, Venezuela, Apr. 1976. Pan American Health Organization, Washington, D.C., 1976. xiv, 172 pp. Paper, \$4.

Archaeology for Everyone. Mark Feldman. Quadrangle (New York Times), New York, 1977. xiv, 366 pp. \$12.50

Asimov on Numbers. Isaac Asimov. Doubleday, Garden City, N.Y., 1977. xviii, 250 pp., illus. \$9.95.

An Atlas of Insect Diseases. Jaroslav Weiser. Junk, The Hague, and Academia, Prague, ed. 2, 1977. 240 pp. Dfl. 75.

Biological Machines. A Cybernetic Approach to Life. Peter Calow. Arnold, London, 1976 (U.S. distributor, Crane, Russak, New York). viii, 134 pp., illus. Cloth, \$19.50; paper, \$9.95. Special Topics in Biology Series.

The Biology of Adolescence. Herant Katchadourian. Freeman, San Francisco, 1977. xii, 274 pp., illus. Cloth, \$9.95; paper, \$6.95.

Biomembranes. Vol. 8. Lionel A. Manson, Ed. Plenum, New York, 1976. xii, 244 pp., illus. \$22.50.

The Brotherhood of Oil. Energy Policy and the Public Interest. Robert Engler. University of Chicago Press, Chicago, 1977. xii, 338 pp. \$12.50.

Charged Gels and Membranes. Part 2. Papers from a NATO Advanced Study Institute, Forges-les-Eaux, France, 1973. Eric Sélégny, Ed. Reidel, Boston, 1976. xii, 244 pp., illus. \$26.50.

Child Sense. A Guide to Loving, Level-Headed Parenthood. William E. Homan. Basic, New York, ed. 2, 1977. xii, 302 pp. \$10.95.

Comparative Morphology of the Inner Ear in Salamanders (Caudata: Amphibia). R. Eric Lombard. Karger, Basel, 1977. viii, 140 pp., illus. Paper, \$31.25. Contributions to Vertebrate Evolution, vol. 2.

Comparative Pathobiology. Vol. 1, Biology of the Microsporidia. Lee A. Bulla, Jr., and Thomas C. Cheng, Eds. Plenum, New York, 1976. xvi, 372 pp., illus. \$37.50.

Concise Encyclopedia of Astronomy. A. Weigert and H. Zimmermann. Translated from the German edition (Leipzig, 1971) by J. Home Dickson. Revised by H. Zimmermann. Hilger, London, ed. 2, 1976 (U.S. distributor, Crane, Russak, New York). 532 pp., illus. + plates. \$19.50.

Contemporary Topics in Immunobiology. Vol. 5. William O. Weigle, Ed. Plenum, New York, 1976. xvi, 342 pp., illus. \$29.50.

Current R & D Projects in Israel 1975. Natural Sciences and Technology. N. Goldenberg and P. Wollman, Eds. National Council for Research and Development, National Center of Scientific and Technological Information, Tel-Aviv, ed. 4, 1976. Two volumes. xii, 488 pp., and iv, 562 pp. \$60.

The Development of Newtonian Optics in England. Henry John Steffens. Science History Publications (Neale Watson), New York, 1977. viii, 190 pp. \$12.

Drugs Affecting the Renin-Angiotensin-Aldosterone System. Use of Angiotensin Inhibitors. Proceedings of a conference, Sydney, Feb. 1976. G. S. Stokes and K. D. G. Edwards, Eds. Karger, Basel, 1976. xiv, 258 pp., illus. \$59.25. Progress in Biochemical Pharmacology, vol. 12.

Electroanalytical Chemistry. A Series of Advances. Vol. 10. Allen J. Bard, Ed. Dekker, New York, 1977. xii, 304 pp., illus. \$29.75.

Electrocardiology II. Physiological, Pathophysiological and Diagnostic Research. Proceedings of a congress, Varna, Oct. 1975. H. Abel and Z. Pavlov, Eds. Karger, Basel, 1977. x, 320 pp., illus. \$58.25. Advances in Cardiology, vol. 19.

Elements of Human Genetics. L. L. Cavall-Sforza. Benjamin, Menlo Park, Calif., ed. 2, 1977. xviii, 158 pp., illus. Cloth, \$9.95; paper, \$4.95.

Energy. A Critical Decision for the United States Economy. Samuel M. Dix. Published by the author, 320 Federal Square Building, Grand Rapids, Mich., 1977. xii, 252 pp., illus. Paper, \$30.

Energy Policies of the World. Vol 2, Indonesia, the North Sea Countries, the Soviet Union. Gerard J. Mangone, Ed. Elsevier, New York, 1977. xvi, 320 pp., illus. \$17.50.

Essays on Kuru. R. W. Hornabrook, Ed. Classey, Faringdon, Oxon, England, 1976. x, 150 pp., illus. \$15. Papua New Guinea Institute of Human Biology Monograph Series, 3.

The Ethics of Teaching and Scientific Research. Papers from a conference, New York, Apr. 1975. Sidney Hook, Paul Kurtz, and Miro Todorovich, Eds. Prometheus Books, Buffalo, N.Y., 1977. xiv, 212 pp. \$11.95.

Fundamental Principles of Heat Transfer. Stephen Whitaker. Pergamon, New York, 1977. xviii, 556 pp., illus. \$50.

Gamma-Ray Astronomy. Nuclear Transition Region. E. L. Chupp. Reidel, Boston, 1976. xiv, 318 pp., illus. Cloth, \$39; paper, \$19. Geophysics and Astrophysics Monographs, vol. 14.

A Greek Economist's Journal with an Introduction on Hellenism. Athanase John Sbarounis. Published by the author, 12 Pandrossou Street, Athens, 1975 (distributor, N. Derbis, 1 Proussis St., Athens). 564 pp., illus. Paper, \$15.

Health, Medicine, Society. Proceedings of a conference, Warsaw, Aug. 1973. Magdalena Sokołowska, Jacek Hołówka, and Antonina Ostrowska, Eds. Reidel, Boston, and PWN (Polish Scientific Publishers), Warsaw, 1976. xii, 516 pp. \$39.50.

The Hidden Malpractice. How American Medicine Treats Women as Patients and Professionals. Gena Corea. Morrow, New York, 1977. 310 pp. \$10.

Homogeneous Banach Algebras. Hwai-chuan Wang. Dekker, New York, 1977. viii, 204 pp. Paper, \$19.75. Lecture Notes in Pure and Applied Mathematics, vol. 29.

How to Write Your Autobiography. Preserving Your Family Heritage. Patricia Ann Case. Woodbridge Press, Santa Barbara, Calif., 1977. 112 pp. Paper, \$2.95.

Human Sexuality in Four Perspectives. Frank A. Beach, Ed. Johns Hopkins University Press, Baltimore, 1977. vi, 330 pp. \$15.

Immunological Aspects of Allergy and Allergic Diseases. E. Rajka and S. Korossy, Eds. Plenum, New York, 1976. Vol. 5, Clinical Aspects of Allergic Diseases. viii, 254 pp., illus. \$35. Vol. 7, Allergic Diseases of the Skin. viii, 408 pp., illus. \$35. Vol. 8, Allergic Responses to Infectious Agents. viii, 364 pp., illus. \$35.

International Classification of Diseases for Oncology. World Health Organization, Geneva, 1976 (U.S. distributor, Q Corporation, Albany, N.Y.). xxiv, 134 pp. Paper, \$8.

Kellar Plan for Self-Paced Study Using Masterton and Slowinski's Chemical Principles. Joseph L. Clouser. Saunders, Philadelphia, ed. 2, 1977. xii, 306 pp. Paper, \$6.50. Saunders Golden Sunburst Series.

The Living Dock at Panacea. Jack Rudloe. Line drawings by Olivia Brereton-Hall. Photographs by Anne Rudloe. Knopf, New York, 1977. xii, 274 pp. + plates. \$10.

Mechanics of Feeding of the Mallard (*Anas platyrhynchos* L.; Aves, Anseriformes). The Lingual Apparatus and the Suction-Pressure Pump Mechanism of Straining. G. A. Zweers, A. F. C. Gerritsen, and P. J. van Kranenburg-Voogd. Karger, Basel, 1977. viii, 110 pp., illus. Paper, \$21.25. Contributions to Vertebrate Evolution, vol. 3.

Melanomas. Basic Properties and Clinical Behavior. Proceedings of a conference, Houston, Tex., Jan. 1975. V. Riley, Ed. Karger, Basel, 1976. xx, 456 pp., illus. \$63.75. Pigment Cell, vol. 2.

Membrane Transport. An Interdisciplinary Approach. Arnošt Kotyk and Karel Janáček. Plenum, New York, 1977. 348 pp., illus. \$38.50. Biomembranes, vol. 9.

North America in Maps. Topographical Map Studies of Canada and the USA. R. Knowles and P. W. E. Stowe. Longman, New York, 1976. 96 pp. Paper, \$11.

Oxygen Transport to Tissue—II. Proceedings of a symposium, Mainz, Germany, Mar. 1975. Jürgen Grote, Daniel Reneau, and Gerhard Thews, Eds. Plenum, New York, 1976. xxiv, 782 pp., illus. \$49.50. Advances in Experimental Medicine and Biology, vol. 75.

Physiology of Speech Production. An Introduction for Speech Scientists. W. J. Hardcastle. Academic Press, New York, 1976. xviii, 158 pp., illus. \$9.75.

Plants, Food, and People. Maarten J. Chrispeels and David Sadava. Freeman, San Francisco, 1977. viii, 278 pp., illus. Cloth, \$12; paper, \$6.50. A Series of Books in Biology.

Pots and Plants. Raymond Bridwell and Roger Churches. Photography by Neal Stevens. Woodbridge Press, Santa Barbara, Calif., 1977. 208 pp. Paper, \$3.95.

A Primer of Infant Development. T. G. R. Bower. Freeman, San Francisco, 1977. x, 188 pp., illus. Cloth, \$12.95; paper, \$4.95.

Reverse Discrimination. Barry R. Gross, Ed. Prometheus Books, Buffalo, N.Y., 1977. x, 402 pp. Cloth, \$14.95; paper, \$7.95.

The Self-Production of Society. Alain Touraine. Translated from the French edition (Paris, 1973) by Derek Coltman. University of Chicago Press, Chicago, 1977. xx, 468 pp. \$27.50.

Sourcebook on Health Sciences Librarianship. Ching-chih Chen. Scarecrow Press, Metuchen, N.J., 1977. xii, 308 pp. \$12.50.

The Spectrum of Consciousness. Ken Wilber. Theosophical Publishing House, Wheaton, Ill., 1977. 376 pp. Paper, \$5.75. A Quest Book.

Stability of Dynamical Systems. Theory and Applications. Proceedings of a conference, Mississippi State, Aug. 1975. John R. Graef, Ed. Dekker, New York, 1977. xiv, 214 pp. Paper, \$19.75. Lecture Notes in Pure and Applied Mathematics, vol. 28.

Structural and Geotechnical Mechanics. A Volume Honoring Nathan M. Newmark. Proceedings of a symposium, Urbana, Ill., Oct. 1975. W. J. Hall, Ed. Prentice-Hall, Englewood Cliffs, N.J., 1977. vi, 442 pp., illus. \$27.50.

Structure and Evolution of Close Binary Systems. Proceedings of a symposium, Cambridge, England, July 1975. Peter Eggleton, Simon Mitton, and John Whelan, Eds. Published for the International Astronomical Union by Reidel, Boston, 1976. xii, 414 pp., illus. Cloth, \$39.50; paper, \$32.50. International Astronomical Union Symposium No. 73.

The Structure of the Universe. Jayant Narlikar. Oxford University Press, New York, 1977. viii, 264 pp., illus. Cloth, \$12; paper, \$4.50.

Style, Character and Language. Victor H. Rosen. Samuel Atkin and Milton E. Jucovy, Eds. Aronson, New York, 1977. 394 pp. \$15. Classical Psychoanalysis and Its Applications.

To Secure "Certain Unalienable Rights". Buddhadev Sen. Published by the author, Department of Chemistry, Louisiana State University, Baton Rouge, 1977. xiv, 204 pp. Paper, \$7.50.

Transportation Planning for a Better Environment. Proceedings of a conference, Munich, Sept. 1975. Peter Stringer and H. Wenzel, Eds. Plenum, New York, 1976. xiv, 440 pp., illus. \$37.50. NATO Conference Series II, vol. 1.

Turning Points in American Electrical History. James E. Brittain, Ed. IEEE Press, New York, 1977. xiv, 400 pp., illus. \$25.95. To IEEE members: cloth, \$19.45; paper, \$12.95. IEEE Press Selected Reprint Series.

The Universe. Josip Kleczek. Reidel, Boston, 1976. viii, 260 pp., illus. Cloth, \$27; paper, \$16. Geophysics and Astrophysics Monographs, vol. 11.

Veterinary Pharmacology and Therapeutics. L. Meyer Jones, Nicholas H. Booth, and Leslie E. McDonald, Eds. Iowa State University Press, Ames, ed. 4, 1977. xii, 1380 pp., illus. \$60.

The Wave and Ballistic Theories of Light. A Critical Review. R. A. Waldron. Muller, London, 1977. xiv, 202 pp., illus. £14.50.

Work and Family in the United States. A Critical Review and Agenda for Research Policy. Rosabeth Moss Kanter. Russell Sage Foundation, New York, 1977. iv, 116 pp. Paper. Social Science Frontiers, 9.

The Zapotecs. Princes, Priests, and Peasants. Joseph W. Whitecotton. University of Oklahoma Press, Norman, 1977. xiv, 338 pp., illus. \$14.95. The Civilization of the American Indian Series.